

CLAIMS:

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1. An isolated polynucleotide encoding a polypeptide which comprises the amino acid sequence DELLAALGYKVRASDMA and which on expression in a *Triticum Aestivum* plant provides inhibition of growth of the plant, which inhibition is antagonised by gibberellin.
2. An isolated polynucleotide according to claim 1 wherein the polypeptide includes the amino acid sequence of a *Rht* polypeptide obtainable from *Triticum Aestivum*.
3. An isolated polynucleotide according to claim 2 which includes the nucleotide sequence of nucleic acid obtainable from *Triticum Aestivum* encoding the *Rht* polypeptide, the nucleotide sequence including  
GACGAGCTGCTGGCGGCGCTCGGGTACAAGGTGCGCGCCTCCGACATGGCG.
4. An isolated polynucleotide encoding a polypeptide which comprises the amino acid sequence shown in Figure 8b.
5. An isolated polynucleotide according to claim 4 which has the coding nucleotide sequence shown in Figure 8a.
6. An isolated polynucleotide encoding a polypeptide which on expression in a plant provides inhibition of growth of the plant, which inhibition is antagonised by gibberellin, wherein the polypeptide has an amino acid sequence which shows at least 80% similarity with the amino acid sequence of

the Rht polypeptide of *Triticum Aestivum* encoded by nucleic acid obtainable from *Triticum Aestivum* which includes the nucleotide sequence

GACGAGCTGCTGGCGGCGCTCGGGTACAAGGTGCGCGCCTCCGACATGGCG.

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7. ~~An isolated polynucleotide according to claim 6 wherein said polypeptide includes the amino acid sequence DELLAALGYKVRASDMA.~~

10-8. An isolated polynucleotide according to claim 6 wherein said polypeptide includes a contiguous sequence of 17 amino acids in which at least 10 residues show amino acid similarity or identity with the residue in the corresponding position in the amino acid sequence DELLAALGYKVRASDMA.

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9: An isolated polynucleotide according to claim 8 wherein  
said polypeptide includes a contiguous sequence of 17 amino  
acids in which 16 residues show amino acid identity with the  
residue in the corresponding position in the amino acid  
20 sequence DELLAALGYKVRASDMA.

10. An isolated polynucleotide according to claim 9 wherein said polypeptide includes the amino acid sequence shown in Figure 9b for the maize D8 polypeptide.

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11. An isolated polynucleotide according to claim 10 which has the coding nucleotide sequence shown in Figure 9a.

Sub C30  
cont

12. An isolated polynucleotide according to claim 9 wherein said polypeptide includes the amino acid sequence shown in Figure 6b.

5 13. An isolated polynucleotide according to claim 12 which has the coding nucleotide sequence shown in Figure 6a.

14. An isolated polynucleotide encoding a polypeptide which on expression in a plant confers a phenotype on the plant which is gibberellin-unresponsive dwarfism or which on expression in a *rht* null mutant phenotype plant complements the *rht* null mutant phenotype, such *rht* null mutant phenotype being resistance to the dwarfing effect of paclobutrazol, wherein the polypeptide has an amino acid sequence which shows at least 80% similarity with the amino acid sequence of the *Rht* polypeptide of *Triticum Aestivum* encoded by nucleic acid obtainable from *Triticum Aestivum* which includes the nucleotide sequence

15 GACGAGCTGCTGGCGGCGCTCGGGTACAAGGTGCGCGCCTCCGACATGGCG.

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15. An isolated polynucleotide according to claim 14 wherein the polypeptide includes the amino acid sequence of a *Rht* polypeptide obtainable from *Triticum Aestivum*, with one or more amino acids deleted.

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16. An isolated polynucleotide according to claim 15 wherein the amino acid sequence DELLAALGYKVRASDMA is deleted.

17. An isolated polynucleotide according to claim 15 wherein the amino acid sequence LNAPPPPLPPAPQ is deleted.

18. An isolated polynucleotide according to claim 14 wherein  
5 the polypeptide includes the amino acid sequence shown in Figure 9b for the maize D8 polypeptide, with one or more amino acids deleted.

19. An isolated polynucleotide according to claim 18 wherein  
10 the amino acid sequence DELLAALGYKVRSSDMA is deleted.

20. An isolated polynucleotide according to claim 19 which has the coding nucleotide sequence shown in Figure 9a, wherein the nucleotides encoding the amino acid sequence  
15 DELLAALGYKVRSSDMA are deleted.

21. An isolated polynucleotide according to claim 18 wherein the amino acid sequence VAQK is deleted.

20 22. An isolated polynucleotide according to claim 18 wherein the amino acid sequence LATDTVHYNPSD is deleted.

23. An isolated polynucleotide according to claim 14 wherein the polypeptide includes the amino acid sequence shown in  
25 Figure 6b, with one or more amino acids deleted.

24. An isolated polynucleotide according to claim 23 wherein the amino acid sequence DELLAALGYKVRSSDMA deleted.

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25. An isolated polynucleotide according to claim 24 which has the coding nucleotide sequence shown in Figure 6a, wherein the nucleotides encoding the amino acid sequence DELLAALGYKVRSSDMA are deleted.

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26. An isolated polynucleotide encoding a polypeptide which comprises the amino acid sequence shown in Figure 8b, with the amino acid sequence DELLAALGYKVRASDMA deleted.

10 27. An isolated polynucleotide according to claim 26 which has the coding nucleotide sequence shown in Figure 8a, wherein the nucleotides encoding the amino acid sequence DELLAALGYKVRASDMA are deleted.

15 28. An isolated polynucleotide wherein a polynucleotide according to <sup>claim 1</sup> ~~any of claims 1 to 27~~ is operably linked to a regulatory sequence for expression.

29. An isolated polynucleotide according to claim 28 wherein  
20 the regulatory sequence includes an inducible promoter.

30. An isolated polynucleotide of which the nucleotide sequence is complementary to a sequence of at least 50 contiguous nucleotides of the coding sequence or sequence  
25 complementary to the coding sequence of nucleic acid  
A according to <sup>claim 1</sup> ~~any of claims 1 to 27~~ suitable for use in anti-sense or sense regulation ("co-suppression") of expression said coding sequence and under control of a regulatory

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sequence for transcription.

31. ~~A~~ polynucleotide according to claim 30 wherein the regulatory sequence includes an inducible promoter.

32. A nucleic acid vector suitable for transformation of a plant cell and including a polynucleotide according to <sup>claim 1</sup> ~~any~~ preceding claim.

10 33. A host cell containing a heterologous polynucleotide or  
nucleic acid vector according to <sup>claim 1</sup> ~~any preceding claim~~.

34. A host cell according to claim 33 which is microbial.

15 35. A host cell according to claim 33 which is a plant cell.

36. A plant cell according to claim 35 having heterologous said polynucleotide within its chromosome.

20 37. A plant cell according to claim 36 having more than one  
said polynucleotide per haploid genome.

38. A plant cell according to ~~any of claims 35 to 37~~<sup>claim 35</sup> which is comprised in a plant, a plant part or a plant propagule, 25 or an extract or derivative of a plant.

39. A method of producing a cell according to ~~any of claims~~<sup>claim 1</sup>  
~~33 to 37~~, the method including incorporating said

~~polynucleotide or nucleic acid vector into the cell by means of transformation.~~

40. A method according to claim 39 which includes  
5 recombining the polynucleotide with the cell genome nucleic  
acid such that it is stably incorporated therein.

41. A method according to claim 39 ~~or claim 40~~ which includes regenerating a plant from one or more transformed  
10 cells.

42. A plant comprising a plant cell according to <sup>claim 35</sup>~~any of~~  
~~claims 35 to 37.~~

15 43. A part or propagule of a plant comprising a plant cell  
claim 35  
according to ~~any of claims 35 to 37.~~

44. A method of producing a plant, the method including incorporating a polynucleotide or nucleic acid vector according to <sup>claim 1</sup> ~~any of claims 1 to 32~~ into a plant cell and regenerating a plant from said plant cell.

45. A method according to claim 44 including sexually or  
asexually propagating or growing off-spring or a descendant  
25 of the plant regenerated from said plant cell.

46. A method of influencing a characteristic of a plant, the method including causing or allowing expression from a

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claim 46

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heterologous polynucleotide according to ~~any of claims 1 to 31~~ within cells of the plant.

47. Use of a polynucleotide according to any of claims 1 to 32 in the production of a transgenic plant.

48. A method of identifying or obtaining a polynucleotide according to claim 6, the method including screening candidate nucleic acid using a nucleic acid molecule which specifically hybridises with a polynucleotide according to ~~any of claims 1 to 13~~.

claim 3

49. A method according to claim 48 wherein oligonucleotide primers are employed in PCR.

50. A method according to claim 49 wherein said primers are selected from those shown in Tables 1 and 2.

51. An isolated polypeptide encoded by a polynucleotide according to ~~any of claims 1 to 27~~.

claim 1

52. An antibody including an antigen-binding site with specific binding affinity for the polypeptide according to claim 51.

53. A polypeptide including the antigen-binding site of an antibody according to claim 52.



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54. A method of identifying or obtaining a polypeptide according to claim 51, the method including screening candidate polypeptides with ~~an antibody or~~<sup>a</sup> polypeptide according to ~~claim 52 or~~ claim 53.

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